

Bellwork: 10/3/12

Find the equation of a line that goes through the point $(-8, -5)$ and is perpendicular to $4x - 3y = 9$.

pt $(-8, -5)$

$$m = -\frac{3}{4}$$

$$y + 5 = -\frac{3}{4}(x + 8)$$

$$y + \cancel{5} = -\frac{3}{4}x - \cancel{6}$$

$$y = -\frac{3}{4}x - 11$$

$$\cancel{-3}y = -\frac{4x}{\cancel{-3}} + \frac{9}{\cancel{-3}}$$

$$y = \left(\frac{4}{3}\right)x - 3$$

⑭ parallel to $x+5y=13$ pt $(-10, 7)$

$$m = -\frac{1}{5}$$

$$\text{pt} = (-10, 7)$$

$$\cancel{5}y = \frac{-x}{5} + \frac{13}{5}$$

$$y = \cancel{-\frac{1}{5}}x + \frac{13}{5}$$

$$y - 7 = -\frac{1}{5}(x + 10)$$

$$\underset{+7}{y-7} = -\frac{1}{5}x \underset{+7}{-2}$$

$$\boxed{y = -\frac{1}{5}x + 5}$$

⑩ perpendicular to $3x+y=2$ pt $(3,-1)$

$$y = -\frac{3}{1}x + 2$$

$$m = \frac{1}{3}$$

pt $(3,-1)$

$$y + 1 = \frac{1}{3}(x - 3)$$

$$y + 1 = \frac{1}{3}x - 1$$

$$\boxed{y = \frac{1}{3}x - 2}$$

Equations of lines from a table:

Determine if the table represents a linear function.
If so, write the equation of the line it represents.

(a)

x	y
-5	0
-3	1
-1	2
1	4
3	8
5	16

+2 (

+2 (

+2 (

+2 (

+2 (

not linear

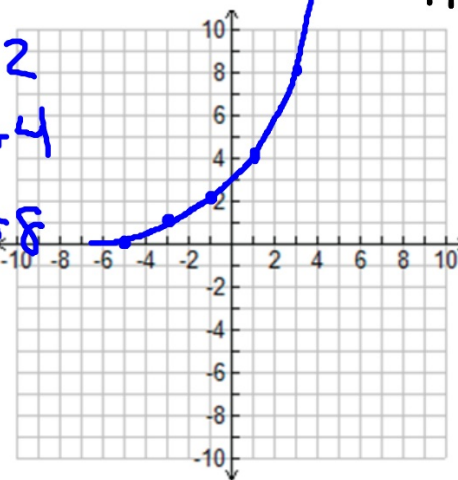
) + 1

) + 1

) + 2

) + 4

) + 8



How do you know
if a table is
linear?

y must increase/decrease
by same #.

x must increase/decrease
by same #.

slope: $\frac{\text{change in } y}{\text{change in } x}$

⑥

x	y
-6	9
-4	8
-2	7
0	6
2	5

$$\text{Slope} = \frac{\text{change in } y}{\text{change in } x} = -\frac{1}{2}$$

$$y - 6 = -\frac{1}{2}(x - 0)$$

$$y - 6 = -\frac{1}{2}x + 0$$

$$y = -\frac{1}{2}x + 6$$

⑦

x	y
-16	2
-12	5
-8	8
-4	11
0	14

$$y - 2 = \frac{3}{4}(x + 16)$$

$$y - 2 = \frac{3}{4}x + 12$$

$$y = \frac{3}{4}x + 14$$

Homework: 10/3/12
Linear Functions
using a table
handout

